The Johns Hopkins Hospital New Clinical Building

General Information

Project Team
- Owner: Johns Hopkins Hospital
- Architect: Perkins + Will
- Structural Engineer: Thornton-Tomasseti
- MEP Engineer: Bard, Rao + Athanas
- GC: Clark/Banks, A Joint Venture

Cost
- GMP of $573 Million

Schedule
- Oct. 2006 to Dec. 2010

Delivery Method
- Design-Bid-Build

Location
- Baltimore, MD

Architecture

Overview
- Total size = 1.5 million sq. ft.
- Two connected towers @ 15 stories each
- 355 Adult beds
- 205 Pediatric beds
- 33 Operating rooms
- 42 Radiological suites
- 96 Emergency treatment Areas

Façade
- 57% Aluminum Unitized Curtain Wall
- 43% Precast concrete panels with brick veneer

Roof
- 70% single-ply membrane/30% green roof

Mechanical

System
- Offsite Central Plant provides chilled water and high pressure steam
- Variable Air Volume System
- Reheat coils in VAV at every room

AHU/Location
- Main Mechanical Room on Levels 6 and 7
- 19 AHUs: 11,000 -133,000 cfm
- 50°F cooled air provided at all time

Unique Features
- Medical O_2 gas stored in liquid bulk
- 30.6% of the total construction cost

Structure

Foundation System
- 275 caissons
- 3'-10' dia. @ 30'-50' deep

Framing System
- Braced frame structural steel
- 12,500 tons
- 28'-8" typical bay size

Floor System
- CIP composite floor decks
- 5 ½" – 11" normal weight reinforced concrete for levels B3-8
- 4 ¼" – 6 ¼" light weight reinforced concrete for levels 9-roof

Electrical

Feeder Service
- 2-15kV, 3 phase feeders
- Located on level 1 of each tower

Distribution
- Stepped down to 460V, 3 phase on Levels 6 and 7
- Total of 8 transformers
- 2 electrical rooms per floor in each tower that step power down to 120/208/240/277V, 3 phase

Redundancy
- Emergency generators @ Central Plant
- UPS provides immediate power backup

Dan Weiger – Construction Management
http://www.engr.psu.edu/ae/thesis/portfolios/2009/pdw5000/